

IMPROVING THE USES OF INFORMATION FOR
POLICY DECISIONS

INTRODUCTION

A large portion of decisions in DoD (as well as in other government agencies) have the following characteristics:

1. The information used for the decisions combines "hard" (technical) or "objective" data with more intuitive (subjective) judgments. The latter, for instance, concern enemy intentions, morale, political feasibility at home, or the probability of success in some R&D venture. Subjective judgments are also needed for the formulation of a problem, the creation of policy alternatives, and other aspects of the structuring of data.
2. The processing of information and the reaching of decisions in Government agencies such as DoD is done through review committees, conferences, and other groups at many different levels.
3. In reaching decisions, the Government and its agencies do not act like a single person (monolithic decisionmaking) but as an organization in which conflicting and sometimes partisan interests interact and positions are arrived at through bargaining as much as through analysis (bureaucratic decisionmaking).

4. Process embedded in a political context (domestic + alliances).

To improve the uses of information for policy decisions in DoD (and other agencies) a better understanding of each of these aspects could help: (1) the role of judgment, (2) the influence of group discussions and group decisions, and (3) bureaucratic influences on decision-making. Little is known as to how analytical reasoning and intuition fit together, what the different forms of intuitive reasoning are, and how the combination of analysis and judgment is affected by bureaucratic forces within the Government.

There are many ways to map out the whole domain that relates the generating and processing of information to policy decisions. The scheme below offers just one such outline. It also serves to locate ongoing Rand work and current Rand interests.

I. THE ROLE OF JUDGMENTS (INTUITION)

What the elementary thought processes called "judgments" (or "intuition," or "subjective opinion") have in common is that they are critical links in our reasoning whose explicit logic is incomplete: distinctions without boundaries, comparisons without a scale, evaluations without criteria,

conclusions without premises. Obviously, "judgments" are to be found in almost any kind of reasoning, not just in governmental decision-making. It might be necessary to deal separately with value judgments, judgments regarding probabilities ("subjective" probabilities), intuitive opinions about facts, and judgments needed to delineate a problem and to generate alternatives.

A. Role of Judgments in Generating Elementary Pieces of Information

(1) Subjective Probabilities

[The earlier Delphi studies at Rand on predictions deal with the effects of group interaction on subjective probability estimates.]

(2) Intuitive Opinions About Facts

[Current Delphi studies deal with this.]

(3) Concept Formation, Categorization, Etc.

B. Role of Judgments in Combining and Structuring Information

(1) Problem Delineation, Selection of Context

(2) Generation of Alternatives

[Rand's work on systems analysis methodology dealt with generation of alternatives.]

(3) Value Judgments

[Some of N. Dalkey's work concerns value judgments. Also H. Raiffa's RM-5868, Preferences for Multi-Attributed Alternatives, and other parts of the DOT-sponsored Rand project on measures of effectiveness.]

II. COMBINING DATA AND JUDGMENTS INTO INFORMATION BEARING ON DECISIONS

A. Formalized Decision Structures: Decision Theory, Tests, Applications

[Rand studies by W. Edwards and R. Kaplan developed decision processes where judgmental inputs are made by man, and the decision is produced by machine according to a decision-theory algorithm. Some of Dan Ellsberg's interests and work concerns the application of decision theory to policy-making.]

B. Gaming: A Critical Evaluation of the Uses of Gaming for Government Decisions

What are the people trying to achieve who use simulation-type games (war games, political games)? Do they have a criterion by which they can judge whether or not they are achieving their goals? In particular, a general review of the uses and measures for success in war gaming is called for (e.g., the arguments regarding environment-poor or rigid games vs. environment-rich or free-form games).

[M. Shubik would work on this project]

C. Indicators

Evaluation of the role of indicators in policy decisions. Vietnam experience with HES, KIA ratios, etc. This study should be related to methodological work on social indicators in the domestic area and to ARPA sponsored university research on quantitative international relations studies (Yale, USC, University of Michigan).

[Interested: J. Coleman, M. Shubik, F. Denton?]

D. Effects of Information Technology

New technology for information processing and communication can have important effects on government policy-making. Methods of data display are changing, with substitutes for the printed page. Closed circuit TV conferences can lead to (controllable) forms of group interaction with desirable (or deleterious) effects. Questions of information overload should be addressed.

[This relates to Rand's Delphi studies. M. Shubik would work in this area.]

E. Systematic Policy Analysis, Cost-Benefit Analysis

An effort should be made to advance the methodology of the 1950s. Various Rand staff members have been working in this area.
(E. Quade, T. Brown, Ed Blum)

III. UTILIZATION OF INFORMATION IN GOVERNMENT BUREAUCRACY,
BUREAUCRATIC DECISION-MAKING

[This would constitute an extension of the work started by A. Marshall et al.]